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SCHOLARLY OPEN ACCESS RESOURCES AND SERVICES FOR ACADEMIC EXCELLENCE: AN OVERVIEW

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1. INTRODUCTION:

A knowledge society is one where creating, sharing and using knowledge could influence the prosperity and well being of the people directly. It is a 'work-in-progress' society that invests significantly in harnessing the available skills, technology and learning towards development. The traditional notion of 'Knowledge for its own sake' has today given place to the modern idea 'Knowledge is for Development'. The concept of "Vasudeva Kutumbakam" which saw the whole humanity as a family, was born here, long before the terms, industrialization, knowledge society, liberalization, globalization came into being. Empowerment is a powerful and important dimension in the process of growth, particularly in a knowledge society. It seeks to enrich the people with the infrastructure, relevant skills, and attitudes to tap the enormous opportunities that emerge in society.

In the ancient time the libraries are the store house of information and knowledge resources, each and every document is tagged with chain (chained libraries), later locked with almirahs and opened rarely. Now all most all the libraries (except few school & college libraries) are following open access system i.e., any user can feel free to enter all nook and corner of the library and browse his/her required information. But access to world's scholarly communication is difficult is because the serials prices increasing enormously. With this trend many libraries stopping to subscribe high quality scholarly journals. Open access movement and open access initiatives worldwide tries to remove some of the barriers or obstacles in access to scholarly information for empowering knowledge society.

2. OPEN ACCESS: A BRIEF HISTORICAL PERSPECTIVE:

In the history and landmark event with respect Open Access is "Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities" emerged in 2003 conference held at Berlin hosted by Max Planck Society. The Budapest Open Access Initiative arises from a small but lively meeting convened in Budapest by the Open Society Institute (OSI) on December 1-2, 2001. The purpose of the meeting was to accelerate progress in the international effort to make research articles in all academic fields freely available on the internet. The participants represented many points of view, many academic disciplines, and many nations, and had experience with many of the ongoing initiatives that make up the open access movement.

3. THE CONCEPT AND MEANING OF OPEN ACCESS:

Open access means permitting any users to read, download, copy, distribute, print , search, or link to the full texts of articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited. . . . (Budapest Open Access Initiative)

The BOAI statement suggests two strategies for achieving open access:
1. Self-archiving
2. Open Access Journals.

3.1. Self-Archiving

Any scholars, authors, creators develop their own archive using standard archival tools and to deposit their intellectual contents in open electronic archives, this type of a practice commonly called, self-archiving.

Self-archiving can be achieved in at least three ways:

- Putting articles on author Web sites – through individual website
- Depositing articles in disciplinary archives – e.g., E-Prints Archive
- Depositing articles in institutional archives and repositories – e.g., Bangalore University Institutional Repository, IISc E-Prints Repository etc.,

3.2. E-Prints

Self-archived articles may be preprints i.e., draft articles that have not been peer-reviewed or edited or postprints i.e., final, edited versions of peer-reviewed articles). The term used for both is "e-prints." Certain scientific disciplines, such as physics, have a long history of e-print distribution.

3.3. Disciplinary Archives

Disciplinary Archives which covers scholarly information with respect to a particular discipline either may be intra-disciplinary, interdisciplinary and multidisciplinary. In other words the subject and knowledge scattered within and out side the discipline. In the early 1990's, formal 'disciplinary archives' began to displace scholar-to-scholar distribution in some scientific disciplines. Disciplinary archives not only provides scholarly information(both pre-prints and post-prints articles) but also facilitate to search, browse and retrieves various products, services, institutions, organizations and associations which promotes the development such discipline. The most famous disciplinary archive is probably arXiv, which covers physics, mathematics, non-linear science, computer science, and quantitative biology. It was established in 1991. It is important to keep in mind that some disciplines rely more heavily on articles than others, and that some disciplines that rely heavily on articles do not have a strong tradition of using e-prints. Consequently, there can be significant disciplinary differences in receptiveness to open access.

3.4. Institutional Repositories

Institutional repositories (IR) are digital archives that captures, organize, preserve and disseminate the intellectual assets and heritage of a signal or group of institutions. Content is the king in the IR. An institutional repositories may contain the intellectual knowledge produced by the research scholars, faculty, students in the form of articles, theses, dissertations, sponsored research projects, lecture materials, technical materials, institutions news letters, handouts, leaflets, datasets, practical manuals, laboratory experiments etc., E-Prints and DSpace at IISc, NAL, RRI, ISI(DRTC) are notable examples of an institutional repository. Where disciplinary archives provide access to the worldwide literature of one or more fields, institutional archives and repositories focus on the literature produced by a single institution. The popular EPrints, DSpace, GSDL software are used for disciplinary archives and institutional repositories throughout the world.

3.5. Open Access Journals:

According to Steven Harnad "..making the refereed journal literature in all disciplines on-line and free for all, with no financial firewalls, is the optimal and inevitable solution for science and scholarship".

DOAJ define open access journals as journals that use a funding model that does not charge readers or their institutions for access. From the BOAI definition of "open access" we take the right of users to "read, download, copy, distribute, print, search, or link to the full texts of these articles" as mandatory for a journal to be included in the directory.

The researchers, scholars and scientists are contributes their ideas, theories, thoughts and experiments in the form of research articles and same contributing towards scholarly communication process. Now there are quite a good number of peer reviewed open access journals functioning around the world. Because journal articles should be disseminated as widely as possible, these new journals will no longer invoke copyright to restrict access to and use of the material they publish. Instead they will use copyright and other tools to ensure permanent open access to all the articles they publish. Because price is a barrier to access, these new journals will not charge subscription or access fees, and will turn to other methods for covering their expenses.

4. SOME SCHOLARLY OPEN ACCESS RESOURCES AND SERVICES

4.1. Directory of Open Access Journals (DOAJ)

The aims and scope of the Directory of Open Access Journals is to increase the visibility and ease of use of open access scientific and scholarly journals thereby promoting their increased usage and impact. The Directory aims to be comprehensive and cover all open access scientific and scholarly journals that use a quality control system to guarantee the content. In short a one stop shop for users to Open Access Journals. (http://www.doaj.org/)

4.2. Intute

With millions of resources available on the Internet, it can be difficult to find useful materials for individual requirements. Intute is a free online service that helps

to find the best web resources for our studies and research. The subject specialists review and evaluate thousands of resources to help choose the key websites in all most all branches of subject. Intute is also help to develop Internet research skills through Virtual Training Suite tutorials, written by lecturers and librarians from universities across the UK. (http://www.intute.ac.uk/)

4.3. Open Access & Institutional Repositories with EPrints
EPrints is the most flexible platform for building high quality, high value repositories, recognized as the easiest and fastest way to set up repositories of research literature, scientific data, student theses, project reports, multimedia artifacts, teaching materials, scholarly collections, digitized records, exhibitions and performances.

Eprints are the digital texts of peer-reviewed research articles, before and after refereeing. Before refereeing and publication, the draft is called a "preprint." The refereed, accepted final draft is called a "postprint." (Note that this need not be the publisher's proprietary PDF version!) Eprints include both preprints and postprints (as well as any significant drafts in between, and any post publication updates). Researchers are encouraged to self-archive them all. The OAI tags keep track of all versions. All versions should contain links to the publisher's official version of record (http://www.eprints.org/).

An Eprint Archive is a collection of digital documents. OAI-compliant Eprint Archives share the same metadata, making their contents interoperable with one another. Their metadata can then be harvested into global "virtual" archives, such as OAIster, that are seamlessly navigable by any user (just as a commercial index or abstract database is navigable, but with full-text access).

4.4. Vascoda Portal
Vascoda is a free of charge internet portal for all those looking for scientific and scholarly information. Vascoda offers user-friendly access to reliable information and full texts from a wide range of different subject areas. Starting with one standard user interface, one can choose either a subject-specific or an interdisciplinary search. Using a modern search engine technology, allows a fast and high-structured search across multiple sources, like subject specific databases, bibliographic databases and directories of internet sources. Detailed Collection Level Descriptions leads to high quality, specialized subject-specific portals of vascoda partners. Vascoda and the integrated subject offerings are developed and maintained by academic libraries and nationally important information providers. vascoda has, therefore, access to resources which are not visible to internet search engines (http://www.vascoda.de/)

4.5. arXiv
arXiv is an e-print service in the fields of physics, mathematics, non-linear science, computer science, quantitative biology and statistics. The contents of arXiv conform to Cornell University academic standards. arXiv is owned, operated and funded by Cornell University, a private not-for-profit educational institution. arXiv is also partially funded by the National Science Foundation. At present open access to 5,72,135 e-prints in Physics, Mathematics, Computer Science, Quantitative Biology, Quantitative Finance and Statistics. (http://arxiv.org/)

4.6. JISC
JISC inspires UK colleges and universities in the innovative use of digital technologies, helping to maintain the UK's position as a global leader in education. JISC provides: (http://www.jisc.ac.uk/)

- A world-class network - JANET
- Access to electronic resources
- New environments for learning, teaching and research
- Guidance on institutional change
- Advisory and consultancy services
- Regional support - RSCs

4.7. WorldWideScience:
World Wide Science is a global science gateway connecting to national and international scientific databases and portals. Much of the information accessed via this gateway is freely available and open domain. It provides only quality, authoritative science information from the most current research provided by participating nations. World Wide Science accelerates scientific discovery and progress by providing one-stop searching of global science sources. The World Wide Science Alliance, a multilateral partnership, consists of participating member countries and provides the governance structure for World Wide Science. Any citizens and scientists in all nations… indeed anyone interest in science can make use of resources available on the portal. Users can get the most current findings in fields such as energy, medicine, agriculture, environment, and basic sciences. Currently, approximately 60 databases and portals from over 60 countries are searchable through WorldWideScience.org. The global science gateway initiative began with a Statement of Intent to partner between the United States and the United Kingdom. Since then, a multilateral partnership, the WorldWide Science Alliance, has been formed to provide a geographically diverse, long-term governance structure. The Alliance will promote and build upon the original vision of a global science gateway. Other nations are invited to participate. This portal is hosted by the U.S. Department of Energy Office of Scientific and Technical Information. (http://worldwidescience.org/)

4.8. Public Library of Science (PLoS):
The Public Library of Science (PLoS)is a nonprofit organization of scientists and physicians committed to making the world's scientific and medical literature a public resource. The major goal of the organization is to open the doors to the world's library of scientific knowledge by giving any scientist, physician, patient, or student - anywhere in the world - unlimited access to the latest scientific research. Its founding in October 2000 by biomedical scientists Harold E. Varmus, Patrick O. Brown, and Michael B. Eisen, PLoS's first action was to circulate an open letter encouraging scientific publishers to make the research literature available for distribution through free online public archives such as the US National Library of Medicine's PubMed Central. This letter, signed by nearly 34,000 scientists from 180 countries, prompted significant steps by many scientific publishers towards freer access to published research.
(http://www.plos.org/)

4.9. OAIster
OAIster is a union catalog of millions of records representing open archive resources that was built by harvesting from open archive collections worldwide using the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH). Today, OAIster boasts more than 23 million records representing digital resources from more than 1,100 contributors. OAIster records are freely available through WorldCat.org. The records of the open archive digital resources available via OAIster lead to a wide range of Multidisciplinary resources such as Digitized (scanned) books and journal articles, Digital text, Audio files (wav, mp3), Video files (mp4, QuickTime), Photographic images (jpeg, tiff, gif) , Data sets (downloadable statistical information), Theses and research papers.(http://www.oclc.org/oaister/)

4.10. eScholarship
eScholarship provides a suite of open access, scholarly publishing services and research tools that enable departments, research units, publishing programs, and individual scholars associated with the University of California to have direct control over the creation and dissemination of the full range of their scholarship. eScholarship, one can publish the original scholarly works on a dynamic research platform available to scholars worldwide such as journals, books, working papers, conference proceedings, seminar/paper series. eScholarship also provides deposit and dissemination services for postprints, or previously published articles. (http://escholarship.org/)

4.11. HighWire Press
High Wire press is the largest archive of free full-text science on Earth! As of November 2009 HighWire assisting online publication of 1,958,465 free full-text articles and 6,142,815 total articles. There are 10 sites with free trial periods, and 46 completely free sites. 281 sites have free back issues, and 1187 sites have pay per view! (http://highwire.stanford.edu/lists/freeart.dtl).

4.12. J-STAGE
In order to support the information transmission function of user organizations, the "Japan Science and Technology Information Aggregator, Electronic" (J-STAGE), developed by Japan Science and Technology Agency (JST), set up the hardware and software necessary for electronic journal release within JST to provide services 24 hours a day, 7 days a week. The major objective of the J-STAGE is developing Japan's science and technology research at an international level, it is important to disseminate outstanding research and development results to the world instantaneously. (http://www.jstage.jst.go.jp/browse/).

4.13. TechXtra
TechXtra is a free service which can help you find articles, books, the best websites, the latest industry news, job announcements, technical reports, technical data, full text eprints, the latest research, thesis & dissertations, teaching and learning resources and more, in engineering, mathematics and computing (www.techxtra.ac.uk/).

4.14. Chemspy:
Chemspy prepared the extensive list of free Biotechnology & Pharmaceuticals magazines, white papers, download and podcasts to find the titles that best match with user's requirements; topics include chemicals, genetics, bioinformatics and genomics. Simply complete the application form and submit it. All are absolutely free to professionals who qualify. (http://www.chemspy.com/)

4.15. Internet for Librarians:
Internet for Librarians has been a popular information resource site for librarians since 1994. It is an information portal designed for librarians to locate internet resources related to LIS Profession. It provides links to over 4,000 resources. All the resources are recommended, selected and reviewed by librarians. (http://lii.org/)

5.16. Ingenta:
Ingenta offers an integrated free search service for scholarly communication. Searching Ingenta is free but article delivery service is charged.
(www.ingenta.com/)

4.17. Internet Library for Librarians:
Internet Library for Librarians has been one of the most popular information

resource sites for librarians. It is an information portal specifically designed for librarians to locate Internet resources related to LIS profession. This portal provides links to more than 3,500 resources. All the resources are recommended, selected, and reviewed by librarians. Each entry has a full description of the goals and /or scope of the resource, as well as the contact information if provided. Internet Library for Librarians is a handy and useful tool for both novices and experienced library staff. (http://www.itcompany.com/inforetriever/)

4.18. Australian Digital Thesis (ADT)
The aim of the ADT program is to establish a distributed database of digital versions of theses produced by the postgraduate research students at Australian universities. The theses will be available worldwide via the web. The ideal behind the program is to provide access to, and promote Australian research to the international community. The initial project was funded by an Australian Research Council (ARC) - Research Infrastructure Equipment and Facilities (RIEF) Scheme grant (1997/1998). (http://adt.caul.edu.au/)

4.19. AERADE Reports Archive:
AERADE is a quality portal to Aerospace and Deference Resources on the internet. The Aerade Reports Archive incorporates more than ten thousand, historically significant, digitised reports from the Aeronautical Research Council (ARC) - the principal agency in Great Britain with a major output of reports on matters aeronautical, which existed from 1909-1979, and published reports until 1980. (http://aerade.cranfield.ac.uk/reports.html).

4.20. ARROW
Australian Research Repositories Online to the World (ARROW) is project and their objective is to identify and test software to support best-practice institutional digital repositories at the ARROW Consortium member sites to manage e-prints, digital theses and electronic publishing. This has been developed and tests a national resource discovery service using metadata harvested from the institutional repositories by the National Library of Australia
(http://www.arrow.edu.au/)

4.21. Citeseer
CiteSeer is a scientific literature digital library and search engine that focuses primarily on the literature in computer and information science. CiteSeer aims to improve the dissemination and feedback of the scientific literature and to provide improvements in functionality, usability, availability, cost, comprehensiveness, efficiency, and timeliness in the access of scientific and scholarly knowledge. The CiteSeer model was used to create a similar search engine, SmealSearch, for academic business documents. CiteSeer also provides mirrors at other sites. CiteSeer was the first digital library and search engine to provide automated citation indexing and citation linking using the method of autonomous citation indexing. (citeseer.ist.psu.edu/)

5. OPEN ACCESS/ARCHIVE IN INDIA:
The situation in India regarding Open Access/Archive has found its roots mainly in the elite institutions and organisations such as Indian Institute of Science (IISc), Indian Academy of Science, Indian National Science Academy, Indian Medlars, NISCAIR etc., and some R & D organizations also took initiatives to create digital repositories to access to intellectual output of the institute. But the initiatives from the Government of India in this direction not visible when compare to US, UK, Australia and European countries, even though the Indian has potential strong in the Information and Communication Technologies. It was worth to note that some the above mentioned organizations are understand the significance of open access to scholarly communication using open standard system (OSS) technologies.

5.1. Indian Academy of Science
One of the oldest and reputed learned scientific societies with its aims and objectives is to promote and progress of science. The academy has taken the lead in India in providing open access its publications. (www.ias.ac.in/)

5.2. INSA:
Indian National Science Academy (INSA): Another learned academy INSA proposed a project, Building Digital Resources: Creating Facilities at INSA for hosting Science and Technology journals online. INSA wants to promote open access initiatives in India by inviting to host repositories on the INSA server. (www.insa.ac.in/)

5.3.E-Prints IR Archive:
An Institutional Repository of intellectual output from the prestigious nationally important institute i.e., the Indian Institute of Science, Bangalore developed and maintaining e-Prints repository. This archive successfully maintained by the National Centre for Science Information (NCSI) and support self-archiving various file formats. (eprints.iisc.ernet.in/)

5.4. Bioline International:
Bioline International is a not-for-profit scholarly publishing cooperative committed to providing open access to quality research journals published in developing countries. BI's goal of reducing the South to North knowledge gap is crucial to a global understanding of health (tropical medicine, infectious diseases, epidemiology, emerging new diseases), biodiversity, the environment, conservation and international development. By providing a platform for the distribution of peer-reviewed journals (currently from Bangladesh, Brazil, Chile, China, Colombia, Egypt, Ghana, India, Iran, Kenya, Malaysia, Nigeria, Tanzania, Turkey, Uganda and Venezuela), BI helps to reduce the global knowledge divide by making bioscience information generated in these countries available to the international research community world-wide (http://www.bioline.org.br/)

5.5. Indian Medlars Centre
IndMED - database covering prominent peer reviewed Indian biomedical journals. Database designed to provide medical professionals/researchers/students and the medical library professional quick and easy access to Indian literature. (http://indmed.nic.in/)

MedInd is one point resource of peer reviewed Indian biomedical literature covering full text of IndMED journals. It has been designed to provide quick and easy access through searching or browsing. (http://medind.nic.in/)

5.6. Open J-Gate
Open J-Gate is an electronic gateway to global journal literature in open access domain. Launched in 2006, Open J-Gate is the contribution of Informatics (India) Ltd to promote OAI. Open J-Gate provides seamless access to millions of journal articles available online. Open J-Gate is also a database of journal literature, indexed from 6109 out this 3490 journals are peer reviewed open access journals, with links to full text at Publisher sites.
(http://www.openjgate.com/Search/QuickSearch.aspx)

5.7. NISCAIR Journals:
National Institute of Science Communication and Information Resources (NAISCIR) is publishing arm of India's Council of Scientific and Industrial Research (CSIR) journals (17 journals - one of them in Hindi) and two abstracting journals. NISCAIR adopted the open access philosophy to provide global access India's scholarly publications. (http://www.niscair.res.in/)

5.8. DESIDOC Journal of Library & Information Technology:
This journal provides immediate open access to its content on the principle that making research freely available to the public supports a greater global exchange of knowledge. (http://publications.drdo.gov.in/ojs/index.php/djlit/index)

6. CONCLUSION:
Open Access Archiving (OAA) is a mechanism for making scientific output (papers or articles) accessible as a parallel supplement to the usual scientific publication process. It is accomplished by depositing a copy of the published work in an Open Access Archive (for example, in an institutional or subject-based repository). The terms “archive” and “repository” are taken as equivalent. Archive has historical precedence in this context – for example, the Open Archives Initiative and the 'self-archiving initiative'; repository is a more recent term intended to avoid irrelevant connotations of bulk storage and preservation for documents whose primary utility is “archival” rather than the immediate access and usage that is the primary rationale for Open Access.

In this article the authors made an attempt to identify, locate more useful, authenticated and evaluated open sources resources. But lot more open sources are also available including e-books, organizations and individual institute repositories are not covered in this article due to limitation of number pages and restricted words. It may discuss further during the presentation of this article.

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28. Techxtra: www.techxtra.ac.uk/
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